

immuno biology 5

THE IMMUNE SYSTEM IN HEALTH AND DISEASE

Charles A. Janeway, Jr.

Yale University School of Medicine

Paul Travers

Anthony Nolan Research Institute, London

Mark Walport

Imperial College School of Medicine, London

Mark J. Shlomchik

Yale University School of Medicine



BEST AVAILABLE COPY

BEST AVAILABLE COPY

Vice President: Denise Schanck
Text Editors: Penelope Austin, Eleanor Lawrence
Managing Editor: Sarah Gibbs
Editorial Assistant: Mark Ditzel
Managing Production Editor: Emma Hunt
Production Assistant: Angela Bennett
New Media Editor: Michael Morales
Copyeditor: Len Cegielka
Indexer: Liza Furnival
Illustration and Layout: Blink Studio, London
Manufacturing: Marion Morrow, Rory MacDonald

© 2001 by Garland Publishing.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means—electronic, mechanical, photocopying, recording, or otherwise—without the prior written permission of the copyright holder.

Distributors:

Inside North America: Garland Publishing, 29 West 35th Street,
New York, NY 10001-2299.

Inside Japan: Nankodo Co. Ltd., 42-6, Hongo 3-Chrome, Bunkyo-ku,
Tokyo, 113-8410, Japan.

Outside North America and Japan: Churchill Livingstone, Robert Stevenson House,
1-3 Baxter's Place, Leith Walk, Edinburgh, EH1 3AF.

ISBN 0 8153 3642 X (paperback) Garland

ISBN 0 4430 7098 9 (paperback) Churchill Livingstone

ISBN 0 4430 7099 7 (paperback) International Student Edition

Library of Congress Cataloging-in-Publication Data

Immunobiology : the immune system in health and disease / Charles A. Janeway, Jr. ...

[et al.].-- 5th ed.

p. cm.

Includes bibliographical references and index.

ISBN 0-8153-3642-X (pbk.)

1. Immunology. 2. Immunity. I. Janeway, Charles. II. Title.

QR181 .I454 2001

616.07'9--dc21

2001016039

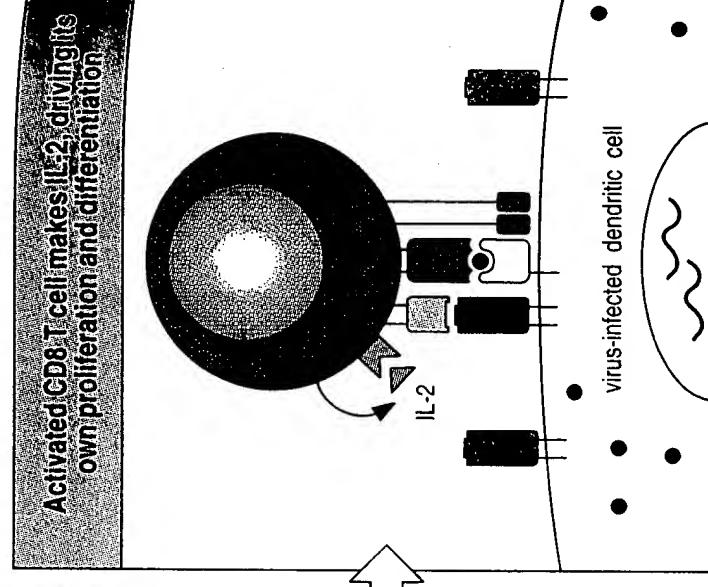
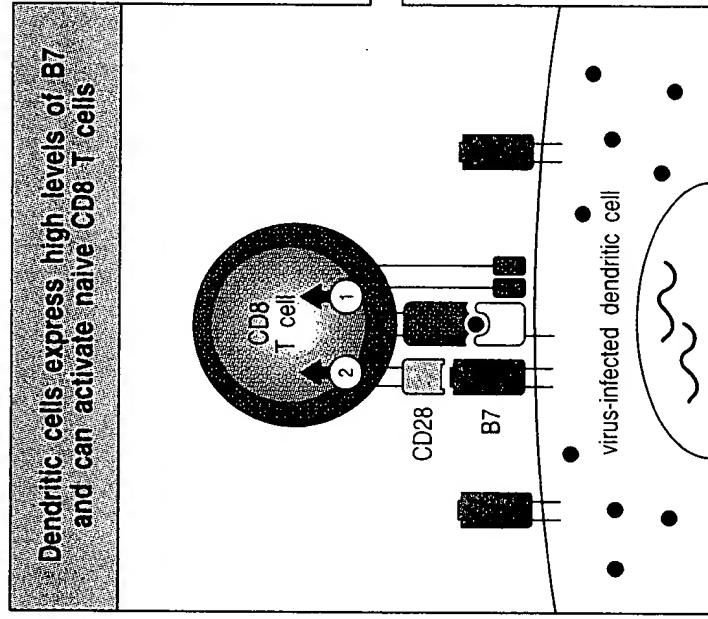
This book was produced using QuarkXpress 4.11 and Adobe Illustrator 9.0

Published by Garland Publishing, a member of the Taylor & Francis Group,
29 West 35th Street, New York, NY 10001-2299.

Printed in the United States of America.

15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

Fig. 8.25 Naive CD8 T cells can be activated directly by potent antigen-presenting cells. Naive CD8 T cells that encounter peptide:MHC class I complexes on the surface of dendritic cells, which express high levels of co-stimulatory molecules (left panel), are activated to produce IL-2 (right panel) and proliferate in response to it, eventually differentiating into armed cytotoxic CD8 T cells (not shown).



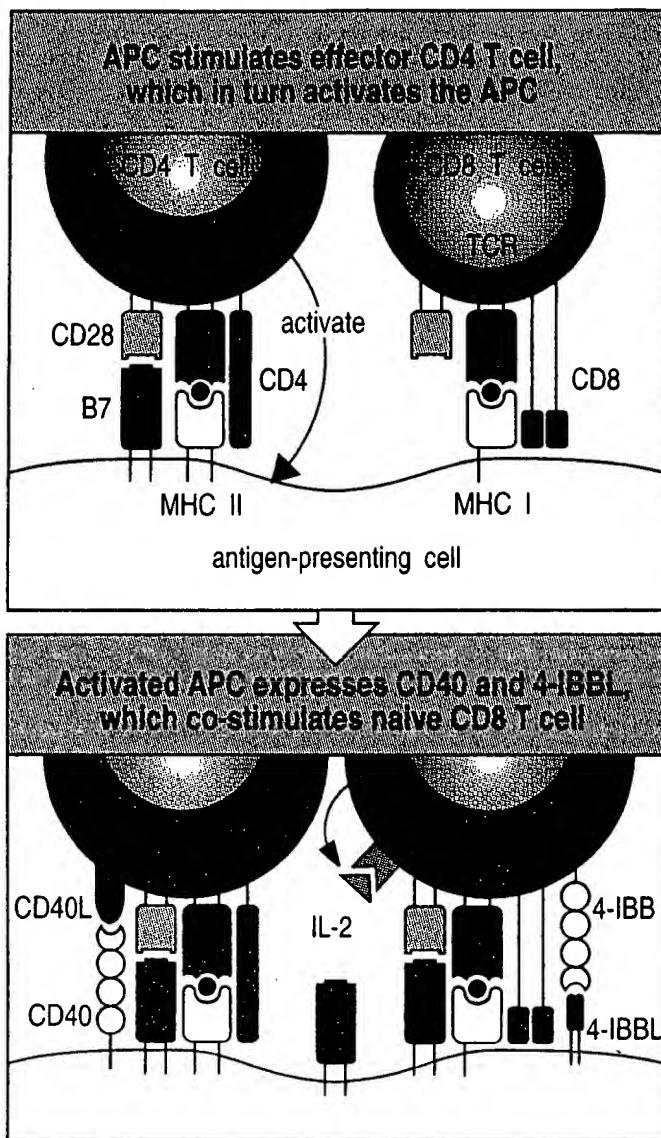


Fig. 8.26 Some CD8 T-cell responses require CD4 T cells. CD8 T cells recognizing antigen on weakly co-stimulating cells may become activated only in the presence of CD4 T cells bound to the same antigen-presenting cell. This happens mainly by an effector CD4 T cell recognizing antigen on the antigen-presenting cell and being triggered to induce increased levels of co-stimulatory activity on the antigen-presenting cell, which in turn activates the CD8 T cell to make its own IL-2.